

Adult mortality & household characteristics in rural South Africa: Implications for natural resource use & development*

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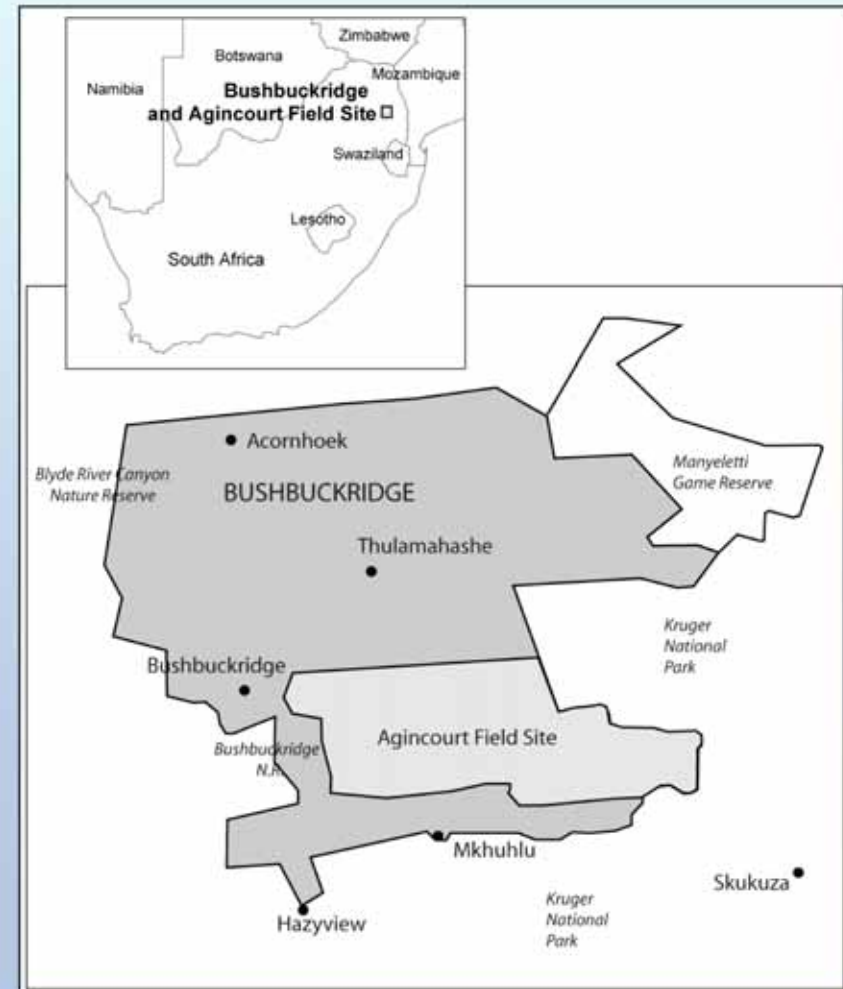
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**Funded by CICRED-PRIPODE*

Study area

- South Africa
 - Mpumalanga Province
 - Bushbuckridge district
 - Agincourt Demographic Surveillance Site
 - 21 rural villages



Introduction

- Two important population and environment trends in rural sub-Saharan Africa:
 - **HIV/AIDS**
 - **Environmental change**
- Adult mortality due to AIDS is becoming an increasingly important household shock
- Natural resources are important in rural livelihoods and serve as a buffer against household shocks (e.g. meeting energy & dietary needs or providing opportunity for generating income)

- Adult mortality in the era of HIV/AIDS:
 - AIDS is leading cause of mortality in prime-age adults (15-49 years) in Sub-Saharan Africa
 - Southern Africa: “epicentre” of the pandemic (27.9% prevalence in antenatal clinic attendees in 2003)

Methods

Research Questions

- 1) Associations between household use of natural resources and household characteristics?
- 2) Association between prime-age adult mortality and household use of key natural resources?
- 3) Implications for development in the context of rising AIDS mortality among poor rural communities?

Research design

- Three data sources:
 - 1) Agincourt Health & Population Unit DSS: sample selection & modelling
 - 2) Survey (n=248; stratified by mortality experience: 124 prime-age adult mortality in last 2 years, 124 no adult mortality in last 2 years)
 - 3) Interviews (n = 30; all mortality)

Survey questionnaire

- For fuelwood and water:
 - Availability, proximity
 - Collection strategies
 - Time allocation
 - Level of use, types of use



Interviews

- Impact of the loss of an adult member on general use natural resources in coping strategies

Results

1. **Quantitative models:** household characteristics, adult mortality & household use of *fuelwood & water*
2. **Qualitative descriptions:** impacts of adult mortality on household resource use

Model coefficients for **fuelwood** (*p<0.05; **p<0.01; - ns)

	HH size	Sex ratio	Old age structure	SES	Adult mortality	Adult mort. X SES	Years since mortality
Use fuelwood	-	-	-	-	3.39*	-0.83*	-
Kg wood/day (summer)	-	1.92**	2.64*	0.99*	-	-	-
Kg wood/day (winter)	-	1.93**	-	-	-	-	-
Male head harvests	0.18**	-	-	-	2.84*	-	-0.89**
Female head/wife harvests	-	-1.42*	-	-	-	-	-
Use electricity (cooking)	-0.10*	-	-	-	-	-	-

Model coefficients for **water**

(*p<0.05; **p<0.01; - ns)

	HH size	Sex ratio	SES	Years since adult mortality
Daily consumption (litres winter)	-	-	-6.24**	-
Time to collect (minutes)	-	-	-11.28*	-
Male head collects	-0.13*	0.53**	-	-0.70*
Female head/ wife collects	-	-0.37**	-	-
Daughter collects	-	-	-0.26*	-

From interviews

- Shifts in household resource use strategies varied by **role of the deceased** in the household economy.
 - Loss of resource collector
 - Loss of wage earner



Loss of Resource Collector

- Impacts primarily on time allocation
- Children often bear increased burden



..... *“instead of studying the child would have to collect fuelwood after school.”*

Loss of Wage Earner

- Collection often substituted for previously purchased goods: Fuelwood, cultivated & wild foods

“I used to buy some wood, but now I must do that with my own hands”

“[we have] stopped purchasing [food] because you only do that when you have money...sometimes we buy [food] but most of the time we rely on the garden”

“there is a big change now because we no longer have food, we just get assisted by the relatives... and we depend more now in the field [for collecting wild vegetables]”

“Locusts are now our beef”

Policy implications

1. Natural resource management

- HIV/AIDS: ↓ population growth **BUT** ↑ in household use of resources
- Natural resources: important “buffers” for households impacted by AIDS, particularly for **poorer** households
- Biomass energy will remain primary energy source in an era of HIV/AIDS
- Support needed for local management of natural resources
- Interventions needed to ↑ resource supply & ↑ resource use efficiency

2. Rural development

- Rural energy: address economic barriers to affordable electricity for cooking
- Food security: support for low-input agriculture and use of wild foods

3. Public health

- Declining resource stocks: health consequences, especially for immuno-compromised household members e.g.
 - Loss of nutritional benefits of wild foods
 - Increased smoke inhalation from use of “green” wood

Conclusion

- HIV/AIDS & environment interact in complex ways via changes in household structure, livelihoods & coping strategies
- Environment needs to be integrated into HIV/AIDS scholarship & interventions

